

MONTHLY CROP-WEATHER

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MINNESOTA AGRICULTURAL STATISTICS SERVICE IN COOPERATION WITH THE NATIONAL WEATHER SERVICE
TWIN CITIES INT'L AIRPORT, UNIV. OF MINN. EXTENSION SERVICE, AND STATE CLIMATOLOGY, DNR

WINTER IS OFF TO A MILD, WARM START

(The following comments are from Minnesota's County Extension Educators)

CARVER: All fall tillage complete as a result of great weather. Livestock conditions excellent-weather a plus. Forage supplies are plentiful. Hope severe cold does not occur before snow cover-do not need alfalfa plant damage. No unharvested crops.

GOODHUE: Dry and unfrozen as of December 6.

LE SUEUR: The crops in Le Sueur county are harvested and the tillage work that was planned has been completed. There does not look like a shortage of forage for the livestock producers. The livestock in the county have been doing very well with the warm temperatures we've been having. We could use a little moisture before freeze up.

MAHNOMEN: Has been a very mild late fall and early winter. No precipitation the past two and one half months. Hay supplies are good. Field work was completed. Ample time for cleaning of surface ditches. No bumper crops except corn for some. Tough decisions on what to plant next year. Leaning towards a lot of soybeans.

MORRISON: Morrison county is still very dry. Fall fieldwork is done. Livestock are doing well. Temperatures have been great. Some are looking for snow.

MOWER: Crops were generally very good. Soybean yields varied a great deal, but corn yields were more consistent. Fall was very dry and warm. Livestock conditions have been very good.

RED LAKE: Due to the dry fall all harvesting has been completed. Fields are worked and many ditches have been cleaned in Red Lake county.

ROCK: Yields were at or near record levels for corn, soybeans, and alfalfa due to very high corn test weights and excellent quality hay. With minimal crop drying costs and huge government payments the mood in Rock county is positive. Although soil moisture is very low, we have had very mild weather conditions and exceptional attendance at our extension meetings.

Soil Freeze/Thaw Cycles from Minnesota's Climatology Working Group

With the mild fall temperature conditions, many areas of the state still have unfrozen soils. In some areas, the soils are going through an almost daily freeze/thaw cycle, rising a degree or two above 32 F during the day, then falling a few degrees below over the long night. The low sun angle, decreased daylength during December, and frequency of overnight cloudiness tend to reduce the daily temperature range within the soil. The top 4 to 6 inches typically shows a daily range of only 3 to 4 degrees this time of year, while the daily air temperature may range over 15 to 25 degrees F.

Average freeze-up times for southern Minnesota soils are mid November to early December. This occurs when the surface layer freezes to some depth, typically 3-4 inches, and remains so for the balance of the winter. Often times, once the soil freezes in the absence of snow cover, the freezing layer will continue downward in a steady progression, reaching depths of 20 to 40 inches. The deeper migration of the freezing layer in soil is more often sporadic, as freshly deposited snow will periodically form a new insulating blanket and stabilize the downward movement of the freezing layer. The maximum depth of soil freezing does not often occur until late February or March.

However, this fall has been anything but average. The frequent freeze/thaw cycles occurring in the soil surface and shallow layers are conditioning the soil to become more absorbent for any precipitation that occurs. This is because the repeated shrinking and swelling of soil particles, aggregates, and layers magnifies the pore spaces and surface cracks. This is especially true where old crop residues have been left on the surface or just shallowly buried by discing. The increased surface area and roughness will allow more interception of precipitation, as well as more spaces for absorption to take place.

PRECIPITATION AND TEMPERATURE FOR THE MONTH OF NOVEMBER, 1999

Temperatures during November averaged from 6.9 degrees above normal in the Northeast District to 9.8 degrees above normal in the West Central District. Temperature extremes include a low of 5 degrees at Hibbing and a high of 82 degrees at Canby and Redwood Falls. Average precipitation ranged from 0.02 inches in the North Central District to 1.36 inches in the Southeast District. Greatest monthly precipitation of 1.82 inches was recorded at Winona.

Precipitation and Temperature Summary for November, 1999

	High	Low	Temperature Month Ave	Dept. for Month	Precipitation Month Total	Dept. for Month
<u>NW DIST 1</u>						
CROOKSTON	74	8	35.5	9.8	0	-.67
MOORHEAD	71	7	37.1	9.0	0	-.73
WARROAD	69	13	34.1	9.5	.23	-.68
<u>NC DIST 2</u>						
GRAND RAP.	71	16	36.0	8.8	.05	-1.23
INTL FALLS	72	10	33.4	8.5	0	-1.15
ITASCA	69	9	35.3	9.0	0	-1.15
<u>NE DIST 3</u>						
DULUTH	71	15	36.2	7.8	.69	-1.11
GRAND MAR.	62	17	36.4	4.4	.94	-.67
HIBBING	71	5	34.4	8.4	.04	-1.08
<u>WC DIST 4</u>						
ALEXANDRIA	76	13	38.2	8.8	.05	-1.11
BROWNS VAL	76	11	38.6	8.5	0	-.89
CANBY	82	15	42.6	10.8	.05	-1.28
FERGUS FLS	74	13	40.0	11.5	0	-.89
MONTEVIDEO	80	13	41.0	9.7	.05	-1.29
MORRIS	78	12	39.1	9.6	.07	-1.01
<u>CENT DIST 5</u>						
BECKER	78	16	39.8	10.1	.27	-1.26
HUTCHINSON	81	16	40.8	8.8	.27	-1.13
OLIVIA	M	M	M	M	M	M
ST. CLOUD	75	13	37.4	7.7	.20	-1.07
STAPLES	74	10	36.2	8.1	.01	-1.19
WILLMAR	80	12	39.6	8.7	.19	-1.09
<u>EC DIST 6</u>						
AITKIN	70	14	38.2	9.4	.35	-1.11
CAMBRIDGE	M	M	M	M	M	M
MSP AIRPRT	77	17	41.8	8.6	.77	-.78
STP CAMPUS	77	20	43.0	7.7	.56	-1.09
<u>SW DIST 7</u>						
LAMBERTON	81	16	41.4	9.0	.17	-.98
PIPESTONE	78	12	40.4	9.5	.04	-1.12
REDWOOD FL	82	17	42.2	8.8	.19	-1.18
WORTHINGT.	79	15	42.0	10.2	.09	-1.03
<u>SC DIST 8</u>						
FARIBAULT	78	17	41.4	8.9	1.37	-.22
WASECA	79	18	41.0	8.8	1.36	-.36
WINNEBAGO	80	19	42.0	9.3	.64	-.76
<u>SE DIST 9</u>						
RED WING	78	18	40.9	9.8	1.33	-.54
ROCHESTER	75	18	40.1	7.5	1.00	-.61
ROSEMUNT	77	18	42.2	9.2	1.17	-.67
WINONA	78	23	44.2	9.1	1.82	.12
M=data missing						

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